

CLAIMS

What is claimed is:

1. An integrated component mounting system, comprising:
 - (a) a shaft defining a longitudinal axis;
 - (b) a component disposed on said shaft; and
 - (c) means for exerting and transmitting a radial force, wherein said means for exerting and transmitting a radial force controls radial movement of said component with respect to said longitudinal axis defined by said shaft.
2. The integrated component mounting system as recited in claim 1, wherein said means for exerting and transmitting a radial force substantially prevents radial movement of said component when said component is in a desired radial position.
3. The integrated component mounting system as recited in claim 1, wherein said means for exerting and transmitting a radial force at least partially controls axial movement of said component along said longitudinal axis defined by said shaft.
4. The integrated component mounting system as recited in claim 3, wherein said shaft further comprises a support member and said means for exerting and transmitting a radial force cooperates with said support member to substantially prevent axial movement of said component when said component is in a desired axial position.

5. The integrated component mounting system as recited in claim 1, wherein said means for exerting and transmitting a radial force moves said component to a desired radial position during assembly of the integrated component mounting system.

6. The integrated component mounting system as recited in claim 5, wherein when said component is in said desired position, said component is centered with respect to said longitudinal axis.

7. The integrated component mounting system as recited in claim 5, wherein when said component is in said desired position, said component is off-center with respect to said longitudinal axis.

8. The integrated component mounting system as recited in claim 1, wherein said means for exerting and transmitting a radial force automatically centers said component with respect to said longitudinal axis during assembly of the integrated component mounting system.

9. The integrated component mounting system as recited in claim 1, wherein said means for exerting and transmitting a radial force secures said component to said shaft.

10. The integrated component mounting system as recited in claim 1, wherein said means for exerting and transmitting a radial force transmits an axial force and a radial force to said component, and said transmission of said axial force and said transmission of said radial force occurs simultaneously.

11. The integrated component mounting system as recited in claim 1, wherein said means for exerting and transmitting a radial force comprises:

- (a) a nut configured to engage said shaft;
- (b) a first shaped surface defined by said component; and
- (c) a second shaped surface defined either by said shaft or by said nut and arranged for contact with said first shaped surface.

12. The integrated component mounting system as recited in claim 1, wherein said means for exerting and transmitting a radial force comprises:

- (a) a nut configured to engage said shaft;
- (b) an interface structure that is attached to the component and defines a first shaped surface; and
- (c) a second shaped surface defined either by said shaft or by said nut and arranged for contact with said first shaped surface.

13. The integrated component mounting system as recited in claim 1, wherein said component comprises a target anode.

14. An integrated component mounting system, comprising:

- (a) a shaft including a support member and defining a longitudinal axis;
- (b) a nut configured to engage said shaft;
- (c) a component that defines a first shaped surface and is disposed on said shaft between said nut and said support member; and
- (d) a second shaped surface defined either by said shaft or by said nut and arranged for contact with said first shaped surface.

15. The integrated component mounting system as recited in claim 14, wherein said first shaped surface defines a first inclination angle and said second shaped surface defines a second inclination angle.

16. The integrated component mounting system as recited in claim 14, wherein said second shaped surface is defined by said shaft.

17. The integrated component mounting system as recited in claim 14, wherein said second shaped surface is defined by said nut.

18. The integrated component mounting system as recited in claim 14, wherein said first and second shaped surfaces each describe a portion of a circular curve.

19. The integrated component mounting system as recited in claim 14, wherein said first and second shaped surfaces each describe a parabolic curve.

20. The integrated component mounting system as recited in claim 14, wherein said first shaped surface is convex and said second shaped surface is concave.

21. The integrated component mounting system as recited in claim 14, wherein said first shaped surface is concave and said second shaped surface is convex.

22. The integrated component mounting system as recited in claim 14, wherein said second shaped surface is defined by said nut, and a third shaped surface is defined by said component and said third shaped surface is arranged for contact with a fourth shaped surface defined by said shaft.

23. The integrated component mounting system as recited in claim 22, wherein at least two of said first, second, third, and fourth shaped surfaces describe a portion of a circular curve.

24. The integrated component mounting system as recited in claim 22, wherein at least two of said first, second, third, and fourth shaped surfaces describe a parabolic curve.

25. The integrated component mounting system as recited in claim 22, wherein said first, second, third, and fourth shaped surfaces each define an inclination angle.

26. The integrated component mounting system as recited in claim 22, wherein said component comprises a target anode.

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27. An x-ray tube, comprising:

- (a) a vacuum enclosure;
- (b) a cathode disposed within said vacuum enclosure; and
- (c) an integrated component mounting system comprising:
 - (i) a shaft defining a longitudinal axis;
 - (ii) a target anode disposed on said shaft and positioned within said vacuum enclosure so as to receive electrons emitted by said cathode; and
 - (iii) means for exerting and transmitting a radial force, wherein said means for exerting and transmitting a radial force controls radial movement of said target anode with respect to said longitudinal axis defined by said shaft.

28. The x-ray tube as recited in claim 27, wherein said means for exerting and transmitting a radial force substantially prevents radial movement of said target anode when said target anode is in a desired radial position.

29. The x-ray tube as recited in claim 27, wherein said means for exerting and transmitting a radial force at least partially controls axial movement of said target anode along said longitudinal axis defined by said shaft.

30. The x-ray tube as recited in claim 27, wherein said means for exerting and transmitting a radial force moves said target anode to a desired radial position during assembly of said integrated component mounting system.

31. The x-ray tube as recited in claim 27, wherein said means for exerting and transmitting a radial force automatically centers said target anode with respect to said longitudinal axis during assembly of said integrated component mounting system.

32. The x-ray tube as recited in claim 27, wherein said means for exerting and transmitting a radial force transmits an axial force and a radial force to said target anode, and said transmission of said axial force and said transmission of said radial force occurs simultaneously.

33. The x-ray tube as recited in claim 27, wherein said means for exerting and transmitting a radial force comprises:

- (a) a nut configured to engage said shaft;
- (b) a first shaped surface defined by said target anode; and
- (c) a second shaped surface defined either by said shaft or by said nut and arranged for contact with said first shaped surface.

34. The x-ray tube as recited in claim 33, wherein said first shaped surface defines a first inclination angle and said second shaped surface defines a second inclination angle.

35. The x-ray tube as recited in claim 33, wherein said second shaped surface is defined by said shaft.

36. The x-ray tube as recited in claim 33, wherein said second shaped surface is defined by said nut.

37. The x-ray tube as recited in claim 33, wherein said second shaped surface is defined by said nut, and a third shaped surface is defined by said target anode and said third shaped surface is arranged for contact with a fourth shaped surface defined by said shaft.

38. The x-ray tube as recited in claim 33, wherein said first and second shaped surfaces each describe a portion of a circular curve.

39. The x-ray tube as recited in claim 33, wherein said first and second shaped surfaces each describe a parabolic curve.

40. An integrated component mounting system, comprising:

- (a) a shaft including a support member and defining a longitudinal axis;
- (b) a nut configured to engage said shaft;
- (c) an interface structure defining an opening and a first shaped surface;
- (d) a component that defines an opening wherein said interface structure is received, and said component is disposed on said shaft between said nut and said support member so that said shaft is received within said opening defined by said interface structure; and
- (e) a second shaped surface defined either by said shaft or by said nut and arranged for contact with said first shaped surface.

41. The integrated component mounting system as recited in claim 40, wherein said second shaped surface is defined by said shaft.

42. The integrated component mounting system as recited in claim 40, wherein said second shaped surface is defined by said nut.

43. The integrated component mounting system as recited in claim 40, wherein said first shaped surface defines a first inclination angle and said second shaped surface defines a second inclination angle.

44. The integrated component mounting system as recited in claim 40, wherein said first and second shaped surfaces each describe a portion of a circular curve.

45. The integrated component mounting system as recited in claim 40, wherein said first and second shaped surfaces each describe a parabolic curve.

46. The integrated component mounting system as recited in claim 40, wherein said component comprises a target anode.

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